

AD-A109 932 ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/G 4/2  
148188 LANCE, MISSILE NUMBER 4576, ROUND NUMBER 370-APT, DECEMB--ETC(U)  
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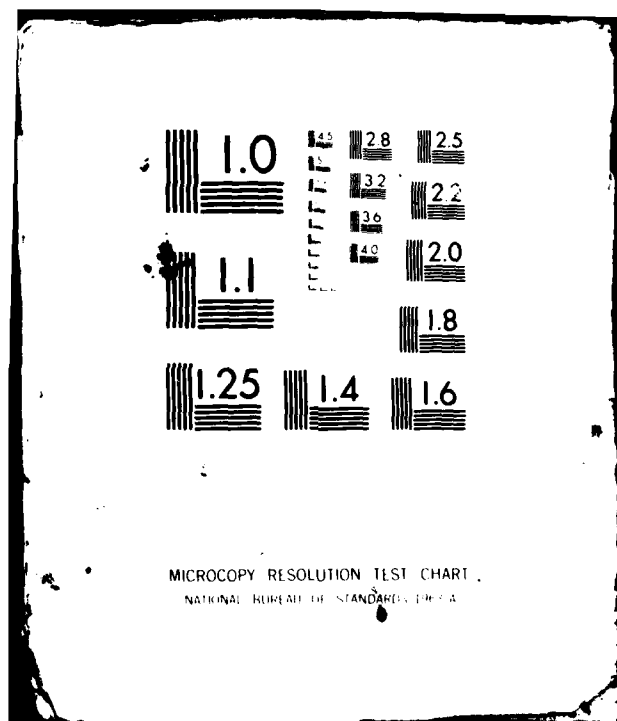
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November 1981  
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AD A109932

METEOROLOGICAL DATA REPORT

14818B Lance  
Missile Number 4576  
Round Number 370-APT  
December 6, 1981

by

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Phone Number (505) 679-9568  
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ATMOSPHERIC SCIENCES LABORATORY  
WHITE SANDS MISSILE RANGE, NEW MEXICO

410663  
ECON 0120 82031  
UNITED STATES ARMY ELECTRONICS COMMAND

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19. KEY WORDS (Continue on reverse side if necessary and identify by block number)		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of the 14818B Lance, Missile Number 4576, Round Number 370-APT presented in tabular form.		

# CONTENTS

	PAGE
INTRODUCTION-----	1
DISCUSSION-----	1
GENERAL AREA MAP-----	2
TABLES:	
1. Surface Observations taken at 1145 MST at LC-39-----	3
2. LC-39 Pilot-Balloon Measured Wind Data at 1135 MST-----	4
3. LC-39 Pilot-Balloon Measured Wind Data at 1145 MST-----	5
4. Launch and Impact Area Computer Met Messages-----	6
5. WSD Significant Level Data at 1220 MST-----	7
6. WSD Upper Air Data at 1220 MST-----	9
7. WSD Mandatory Levels at 1220 MST-----	13
8. SMR Significant Level Data at 1130 MST-----	14
9. SMR Upper Air Data at 1130 MST-----	15
10. SMR Mandatory Levels at 1130 MST-----	18

## INTRODUCTION

14818B Lance, Missile Number 4576, Round Number 370-APT, was launched from LC-39, White Sands Missile Range (WSMR), New Mexico, at 1221:34 MST, 6 Nov 1981. The scheduled launch time was 1145 MST.

## DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

### 1. Observations.

#### a. Surface:

(1) Standard surface observations to include pressure, temperature ( $^{\circ}\text{C}$ ), relative humidity, dew point ( $^{\circ}\text{C}$ ), density ( $\text{gm/m}^3$ ), wind speed and direction, and cloud cover were made at the LC-39 Met Site at T-0 minutes.

(2) Monitor of wind speed and direction was provided in the launch control room.

#### b. Upper Air:

(1) Low level wind data were obtained from Nike-Herc radar tracked pilot-balloon observations at:

### SITE AND ALTITUDE

LC-39 3 KM

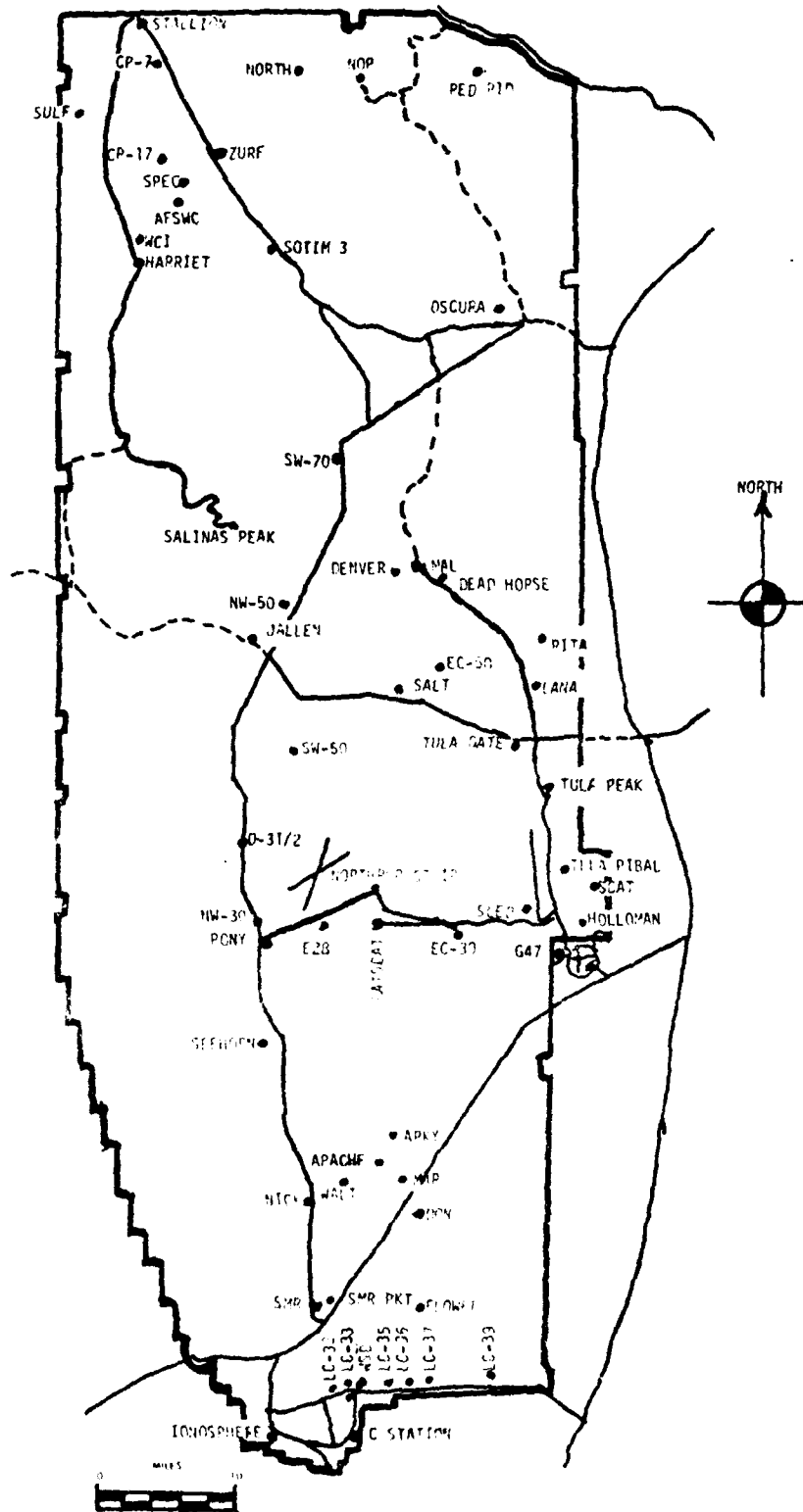
(2) Air structure data (rawinsonde) were collected at the following Met Sites. Data were collected from surface to high as possible in 500-foot increments.

### SITE AND TIME

WSD 1220 MST  
SMR 1130 MST

Accession For	
NTUS	CHIA
DISC	7
Uncl	
3	
By	
Dist	
Avail	
1	
A	
DTIC	
COPY	
INSPECTED	
3	

# WSMR METEOROLOGICAL SITES





# PROJECT SURFACE OBSERVATION

TABLE 1  
 DATE 6 DAY Nov 1981  
 STATION LC-39  
 X= 530.938.82 Y= 186.564.96 H= 4.063.80

TIME M S I	PRESSURE mbs	TEMPERATURE °C	DEW POINT °C	RELATIVE HUMIDITY %	DENSITY gm/m <sup>3</sup>	WIND			VISIBIL- ITY
						DIRECTION degs	SPEED kts	CHARACTER kts	
1145	883.2	22.8	9.0	41		150	03		40

OBSTRUCTIONS TO VISIBILITY	CLOUDS						REMARKS	
	1st LAYER			2nd LAYER		3rd LAYER		
	AMT	TYPE	HGT	AMT	TYPE	HGT		
	1	SC	6,000	1	AC	12,000		

## PSYCHROMETRIC COMPUTATION

TIME: MST	1145	
DRY BULB TEMP.	22.8	
WET BULB TEMP.	14.3	
WET BULB DEPR.	8.5	
DEW POINT	9.0	
RELATIVE HUMID.	41	

## PILOT BALLOON MEASURED WIND DATA

TABLE 2

RELEASED FROM LC-39

DATE 6 Nov 1981

TIME 1135 MST

COORDINATES (WSTM)

$$\chi = 530,938.82$$
$$\gamma = 186,564.96$$

H= 4,063.80

NOTE: WIND DIRECTIONS ARE REFERENCED TO \_\_\_\_\_

HEIGHTS ARE METERS AGL X OR FEET AGL           .

HEIGHT AGL	DIRECTION DEGREES	SPEED KNOTS
SFC	140	06
60	134	07
120	131	08
180	128	10
240	127	12
300	125	14
360	125	15
420	129	14
480	133	14
540	137	14
600	141	14
660	145	13
720	149	14
780	153	16
840	156	17
900	159	18
960	161	19
1020	162	21
1080	164	22
1140	165	24
1200	166	25
1260	166	27
1320	169	27
1380	171	27
1440	174	26
1500	177	26
1560	180	26
1620	183	25
1680	186	25
1740	190	24

[illegible][illegible]

## PILOT BALLOON MEASURED WIND DATA

TABLE 3

RELEASED FROM LC-39 DATE 6 Nov 1981 TIME 1145 MST

COORDINATES (WSTM) X= **530,938.82** Y= **186,564.96** H= **4,063.80**

NOTE: WIND DIRECTIONS ARE REFERENCED TO \_\_\_\_\_

HEIGHTS ARE METERS AGL X OR FEET AGL.

HEIGHT AGL	DIRECTION DEGREES	SPEED KNOTS
SFC	150	03
60	143	04
120	140	06
180	138	08
240	137	10
300	137	11
360	136	13
420	136	13
480	136	14
540	136	14
600	135	15
660	135	15
720	139	16
780	142	16
840	146	17
900	149	18
960	151	19
1020	156	20
1080	160	21
1140	163	22
1200	167	23
1260	169	25
1320	172	25
1380	175	24
1440	178	24
1500	181	24
1560	184	23
1620	186	22
1680	189	21
1740	192	20

[illegible][illegible]

TABLE 4

Launch and Impact Area Computer Met Messages  
6 November 1981

WSD 1220 MST

METCM1324064

061230122884

00231010 29740884

01258013 29520874

02270014 29160849

03282012 28770810

04316022 28400763

05341018 28180718

06349019 27780676

07357023 27320635

08389022 26940597

09400023 26740560

10420026 26480525

11439030 26200492

12427040 25680446

13435050 24900390

14444050 24050339

15446056 23230294

16447060 22580253

17458048 22390218

18454040 21820187

SMR 1130 MST

METCM1325064

061150122885

00267006 29400885

01286009 29290875

02272013 29020849

03301010 28630810

04307014 28200763

05327027 28150718

06355020 27800676

07356022 27350635

08374023 26920596

09409023 26670560

10412029 26480525

11438030 26260492

12426042 25680446

13442051 24880390

14445052 23950339

15441058 23180293

16443061 22610253

17452056 22300217

18460040 21860186

GLUDETIC COORDINATES  
32.40045 LAT DEG  
106.57055 LON DEG

SIGNIFICANT LEVEL DATA  
ST00020084  
WHITE SANDS

TABLE 5

STATION ALTITUDE 5069.00 FEET MSL  
C. 00V. 21  
ASCENSION NO. 004  
1200 HRS MST

PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT
805.9	25.0	51.0
804.8	19.9	51.0
800.0	17.5	59.0
800.4	14.0	45.0
798.4	10.5	50.0
797.4	9.2	49.0
795.4	10.1	55.0
790.0	5.9	61.0
787.8	6.2	65.0
780.4	2.5	58.0
775.8	-2.5	62.0
770.0	-4.5	48.0
765.4	-4.5	42.0
762.2	-8.1	25.0
760.0	-8.4	27.0
757.2	-10.4	25.0
750.0	-12.0	24.0
748.0	-12.5	26.0
745.4	-22.1	55.0
740.0	-26.4	69.0
737.2	-27.1	59.0
735.4	-29.5	54.0
730.0	-35.4	38.0
725.8	-38.0	42.0
720.0	-39.6	50.0
717.8	-41.0	
712.2	-47.1	
710.0	-48.7	
705.4	-47.0	
700.0	-52.1	
697.8	-50.4	
695.4	-57.1	
690.0	-50.5	
687.4	-55.0	
685.4	-55.0	
680.0	-70.0	
675.4	-74.1	
670.0		
665.4		
660.0		
655.4		
650.0		
645.4		
640.0		
635.4		
630.0		
625.4		
620.0		
615.4		
610.0		
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595.4		
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425.4		
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415.4		
410.0		
405.4		
400.0		
395.4		
390.0		
385.4		
380.0		
375.4		
370.0		
365.4		
360.0		
355.4		
350.0		
345.4		
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320.0		
315.4		
310.0		
305.4		
300.0		
295.4		
290.0		
285.4		
280.0		
275.4		
270.0		
265.4		
260.0		
255.4		
250.0		
245.4		
240.0		
235.4		
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225.4		
220.0		
215.4		
210.0		
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195.4		
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175.4		
170.0		
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160.0		
155.4		
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145.4		
140.0		
135.4		
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115.4		
110.0		
105.4		
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95.4		
90.0		
85.4		
80.0		
75.4		
70.0		
65.4		
60.0		
55.4		
50.0		
45.4		
40.0		
35.4		
30.0		
25.4		
20.0		
15.4		
10.0		
5.4		
0.0		

STATION ALTITUDE 5957.00 FEET MSL  
 2 NOV. 41 1420 HRS PST  
 ASCENSION NO. 64

SIGNIFICANT LEVEL DATA  
 510000034  
 WHITE SANDS

GEODETIC COORDINATES  
 52.40143 LAT DEG  
 106.57033 LON DEG

TABLE 5 CONT

PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE		REL. HUM. PERCENT
	AIR	DEWPOINT	
	DEGREES	CENTIGRADE	
69.8 5446.5	-59.1		
70.0 6122.5	-68.8		
59.4 6403.0	-55.5		
56.0 6720.2	-51.2		
50.0 6710.9	-51.6		
50.8 7314.5	-56.9		

STATION ALTITUDE 3000.00 FEET FSL  
 6 NOV. 61 1200 HRS MST  
 ASCENSION NO. 004

UPPER AIR DATA  
 310000Z04  
 WHITE SANDS  
 TABLE 6

GEODETIC COORDINATES  
 32.40043 LAT DEG  
 106.57055 LON DEG

GEODETIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES DEGREES CENTIGRADE	REL. HUMID. PERCENT	DENSITY GM/CM <sup>3</sup>	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
3000.00	783.9	23.0	51.0	1033.9	671.7	130.0	9.9	1.000260
4000.00	683.0	24.9	51.1	1035.7	671.0	130.3	9.9	1.000268
4500.00	655.1	19.7	57.2	1025.9	667.9	140.9	12.0	1.000267
5000.00	632.9	16.9	58.7	1017.4	665.7	148.2	14.4	1.000262
5500.00	617.8	16.3	40.0	1006.8	663.9	151.2	14.0	1.000258
6000.00	622.9	14.0	42.7	992.1	662.2	154.2	11.9	1.000254
6500.00	608.1	13.4	45.2	979.2	660.0	152.2	11.1	1.000250
7000.00	593.0	12.0	47.0	966.4	658.9	166.1	15.2	1.000247
7500.00	579.4	10.0	49.9	953.8	657.3	169.6	19.0	1.000245
8000.00	565.2	9.4	49.1	940.7	655.8	176.1	21.8	1.000237
8500.00	551.3	9.7	52.3	922.5	650.3	151.7	22.6	1.000235
9000.00	537.7	9.0	55.0	903.9	650.2	168.2	21.3	1.000233
9500.00	524.2	8.3	57.0	893.5	654.0	191.2	18.7	1.000229
10000.00	511.0	7.0	59.4	881.3	653.1	194.0	16.4	1.000225
10500.00	498.5	5.7	61.4	869.2	651.0	196.2	16.5	1.000221
11000.00	485.1	4.7	63.8	856.4	650.4	197.7	17.0	1.000218
11500.00	472.4	3.5	66.0	844.3	648.9	197.5	18.5	1.000213
12000.00	459.9	2.2	58.1	832.8	647.3	197.5	20.1	1.000206
12500.00	447.0	0.8	59.9	821.6	645.0	197.9	22.0	1.000203
13000.00	433.4	-0.0	61.7	810.5	643.8	200.9	23.1	1.000199
13500.00	423.4	-1.0	53.9	798.9	642.3	204.8	23.9	1.000193
14000.00	411.0	-3.0	46.5	787.6	640.8	211.0	23.2	1.000187
14500.00	400.0	-4.3	46.5	776.0	639.1	217.0	22.7	1.000183
15000.00	388.5	-4.5	43.7	764.5	638.8	222.2	22.5	1.000175
15500.00	377.2	-4.3	49.0	747.3	639.0	223.4	22.6	1.000173
16000.00	366.1	-5.4	46.4	730.0	637.7	224.7	22.7	1.000170
16500.00	355.2	-6.5	47.9	724.8	636.4	227.1	22.7	1.000167
17000.00	344.5	-7.0	47.3	713.8	635.1	230.1	23.1	1.000164
17500.00	334.0	-6.2	45.8	701.7	634.3	234.7	24.4	1.000161
18000.00	323.7	-8.4	43.5	689.6	634.1	237.6	23.6	1.000157
18500.00	313.5	-9.2	43.4	677.5	633.1	240.5	27.1	1.000155
19000.00	303.5	-10.1	43.8	666.4	632.0	243.2	29.4	1.000152
19500.00	293.5	-11.1	44.2	655.7	630.8	245.0	30.3	1.000150
20000.00	283.7	-12.1	44.5	645.3	629.5	248.5	32.3	1.000147
20500.00	274.1	-13.6	44.7	635.1	628.2	245.0	34.8	1.000145
21000.00	264.7	-14.5	44.9	625.1	627.0	243.4	37.3	1.000142
21500.00	255.5	-15.3	45.7	615.2	625.7	241.2	39.0	1.000140
22001.00	246.4	-16.4	45.5	605.5	624.4	239.4	40.2	1.000137
22500.00	237.0	-17.4	45.4	595.9	623.1	238.7	40.4	1.000135
23000.00	228.9	-18.5	46.0	586.5	621.8	239.4	41.0	1.000133

GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LON DEG

UPPER AIR DATA  
3100020004  
WHITE SANDS

TABLE 6 CONT

STATION ALTITUDE 3929.00 FEET PSL  
6 NOV. 61 1220 HRS MST  
ASCENSION NO. 08

GEOMETRIC ALTITUDE PSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GRAMS/LIB METRIC	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
23500.0	420.2	-19.7	53.4	577.4	620.3	241.0	42.0	1.000131
24000.0	411.6	-21.0	47.5	568.4	618.8	242.7	44.1	1.000129
24500.0	403.3	-22.2	49.7	559.6	617.3	244.0	46.6	1.000126
25000.0	395.0	-23.5	50.4	550.9	615.7	244.3	50.0	1.000126
25500.0	386.8	-24.8	62.1	542.4	614.1	244.7	52.1	1.000124
26000.0	378.9	-26.1	67.8	534.0	612.5	245.0	55.3	1.000122
26500.0	371.0	-27.0	53.9	524.9	611.3	245.3	55.1	1.000119
27000.0	363.2	-28.3	50.2	516.7	609.7	245.9	52.4	1.000116
27500.0	355.6	-29.6	54.1	508.6	608.0	246.9	50.8	1.000114
28000.0	348.0	-31.0	55.0	500.7	606.2	248.4	49.9	1.000113
28500.0	340.6	-32.4	55.9	492.8	604.5	250.2	49.2	1.000111
29000.0	333.3	-33.8	50.8	485.1	602.7	251.3	49.4	1.000109
29500.0	326.2	-35.2	57.0	477.6	600.9	252.2	49.7	1.000107
30000.0	319.2	-36.7	59.3	470.2	599.1	252.5	51.0	1.000105
30500.0	312.2	-38.2	41.2	463.0	597.1	252.2	52.2	1.000104
31000.0	305.4	-39.1	59.1	456.2	596.1	251.7	53.2	1.000102
31500.0	298.7	-39.9	50.4**	449.9	595.1	251.4	53.8	1.000100
32000.0	292.1	-40.9	50.4**	443.3	593.7	251.3	53.8	1.000098
32500.0	285.6	-42.2	1.23**	436.8	592.0	251.0	54.5	1.000096
33000.0	279.2	-43.5		430.4	590.4	250.5	56.5	1.000094
33500.0	273.0	-44.8		423.6	588.7	250.0	57.9	1.000093
34000.0	266.9	-46.1		416.4	587.0	249.7	58.7	1.000091
34500.0	260.9	-47.3		409.4	585.3	250.0	59.3	1.000090
35000.0	254.9	-48.0		402.3	583.5	251.0	59.7	1.000088
35500.0	249.1	-48.5		394.3	584.5	252.2	59.7	1.000086
36000.0	243.5	-49.6		386.3	583.9	253.5	59.2	1.000084
36500.0	237.9	-49.6		378.0	583.1	254.7	57.1	1.000082
37000.0	232.5	-49.6		369.5	583.1	255.9	54.8	1.000080
37500.0	227.2	-49.6		361.0	583.5	256.3	52.8	1.000078
38000.0	222.1	-48.0		353.2	584.0	256.6	51.0	1.000077
38500.0	217.0	-49.0		345.2	583.3	255.9	50.0	1.000075
39000.0	212.0	-50.1		337.2	581.9	255.3	48.9	1.000074
39500.0	207.1	-51.1		329.0	580.5	254.7	47.0	1.000072
40000.0	202.4	-52.2		320.8	579.1	254.1	45.2	1.000071
40500.0	197.7	-53.1		312.9	577.6	254.1	43.0	1.000070
41000.0	193.0	-53.9		304.8	576.0	254.3	40.9	1.000068
41500.0	188.5	-54.2		300.7	575.7	255.9	39.2	1.000067
42000.0	184.1	-55.0		294.8	574.0	257.2	37.4	1.000066
42500.0	179.6	-56.4		289.0	573.0	260.4	35.6	1.000064
43000.0	175.5	-56.7		282.5	573.1	263.2	33.8	1.000063

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.



GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LON DEG

UPPER AIR DATA  
3100020084  
WHITE SANDS  
TABLE 6 CONT

STATION ALTITUDE 3929.00 FEET MSL  
0 NOV. 51 1220 HRS MST  
ASCENSION NO. 004

GEOGRAPHIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GRAMS PER CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
						DIRECTION DEGREES (TN)	SPEED KNOTS	
43500.0	171.4	-57.0		276.3	572.7	204.0	32.3	1.000062
44000.0	167.3	-57.0		270.4	572.0	205.0	31.0	1.000060
44500.0	163.3	-58.2		264.7	571.2	205.3	30.7	1.000059
45000.0	159.4	-58.6		259.1	570.4	204.9	30.7	1.000058
45500.0	155.6	-59.4		253.6	569.6	204.0	31.4	1.000056
46000.0	151.9	-60.0		248.3	568.8	203.3	32.1	1.000055
46500.0	148.3	-60.7		243.1	567.6	204.0	32.8	1.000054
47000.0	144.7	-61.7		238.3	566.6	204.9	33.3	1.000053
47500.0	141.2	-62.6		233.5	565.3	207.4	33.8	1.000052
48000.0	137.7	-63.3		228.9	564.1	209.9	34.0	1.000051
48500.0	134.4	-64.0		223.8	563.4	272.3	33.0	1.000050
49000.0	131.1	-64.4		218.6	562.6	275.2	32.0	1.000049
49500.0	127.9	-64.9		213.9	562.2	276.6	28.4	1.000048
50000.0	124.7	-65.3		209.1	561.7	277.9	26.3	1.000047
50500.0	121.7	-66.0		204.6	560.7	276.4	22.4	1.000046
51000.0	118.6	-67.2		200.7	559.0	271.7	22.9	1.000045
51500.0	115.7	-68.3		196.9	557.3	267.6	24.1	1.000044
52000.0	112.8	-69.7		193.2	555.6	264.8	27.3	1.000043
52500.0	110.0	-70.2		188.8	554.9	262.7	30.9	1.000042
53000.0	107.2	-70.6		184.3	554.3	262.3	29.8	1.000041
53500.0	104.3	-70.9		179.9	554.1	261.9	28.4	1.000040
54000.0	101.6	-71.2		175.7	553.7	261.3	23.7	1.000039
54500.0	99.3	-71.3		171.3	553.2	260.4	22.4	1.000038
55000.0	96.7	-72.0		167.6	552.3	261.8	19.3	1.000037
55500.0	94.3	-72.3		163.7	551.8	266.2	16.6	1.000036
56000.0	91.9	-73.0		159.9	551.1	274.3	16.0	1.000035
56500.0	89.3	-73.3		156.3	550.4	284.1	17.4	1.000035
57000.0	87.3	-74.0		152.7	549.7	291.3	16.4	1.000034
57500.0	85.0	-74.6		149.7	551.8	297.3	18.6	1.000033
58000.0	82.9	-75.8		142.7	554.1	301.4	18.6	1.000032
58500.0	80.8	-69.1		137.9	556.3	299.4	18.3	1.000031
59000.0	78.8	-69.0		134.4	556.6	298.2	16.7	1.000030
59500.0	76.8	-69.0		131.0	556.6	297.4	19.1	1.000029
60000.0	74.9	-68.9		127.7	556.7	296.7	20.3	1.000028
60500.0	73.0	-68.9		124.3	556.6	299.6	19.3	1.000028
61000.0	71.2	-68.8		121.4	556.9	307.3	17.3	1.000027
61500.0	69.4	-68.6		118.2	557.2	313.2	14.6	1.000026
62000.0	67.7	-68.1		115.0	557.9	311.0	9.1	1.000026
62500.0	66.0	-67.3		111.8	558.6	311.4	4.0	1.000025
63000.0	64.4	-67.0		108.4	559.3	237.4	3.3	1.000024

UPPER AIR DATA  
 ST00020084  
 WHITE SANDS  
 TABLE 6 CONT

STATION ALTITUDE 5950.00 FEET MSL  
 C NOV. 61 1220 HRS MST  
 ASCENSION NO. 084

GEODETIC COORDINATES  
 32.40043 LAT DEG  
 106.57033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEW POINT DEGREES	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	WIND DATA		INDEX OF REFRACTION
						DIRECTION DEGREES(TN)	SPEED KNOTS	
63500.00	62.5	-60.2			105.8	208.7	5.3	1.000024
64000.00	57.2	-63.9			102.9	206.5	6.0	1.000025
64500.00	54.7	-65.4			100.1	224.2	4.7	1.000022
65000.00	52.5	-64.7			97.3	250.0	4.1	1.000022
65500.00	50.2	-63.9			94.0	281.5	4.0	1.000021
66000.00	47.5	-63.2			92.0	307.1	5.0	1.000020
66500.00	44.8	-62.4			89.4	323.5	6.1	1.000020
67000.00	42.5	-61.7			87.0	334.0	7.3	1.000019
67500.00	40.3	-61.3			84.7	339.7	8.1	1.000019
68000.00	38.5	-61.5			82.8	339.8	8.1	1.000018
68500.00	36.7	-61.4			80.7	339.5	8.1	1.000018
69000.00	34.9	-61.2			78.7	324.1	8.5	1.000018
69500.00	33.0	-60.9			76.8	310.7	9.1	1.000017
70000.00	31.2	-60.7			74.8	299.6	9.6	1.000017
70500.00	29.5	-60.5			73.0	289.0	9.7	1.000016
71000.00	27.8	-60.2			71.2	278.9	10.1	1.000016
71500.00	26.4	-60.0			69.4	272.6	9.6	1.000015
72000.00	24.6	-59.8			67.7	266.5	8.8	1.000015
72500.00	23.0	-59.5			66.0	259.8	8.5	1.000015
73000.00	21.5	-59.3			64.5	258.7	9.2	1.000014
73500.00	20.0	-59.1			62.7	257.9	10.0	1.000014
74000.00	18.6	-58.8			61.2	260.1	10.5	1.000014
74500.00	17.2	-58.6			59.6	267.9	9.9	1.000013
75000.00	15.8	-58.4			58.1	270.9	9.7	1.000013
75500.00	14.5	-58.1			56.7	274.5	12.2	1.000013
76000.00	13.2	-57.9			55.5	270.1	16.1	1.000012
76500.00	12.0	-57.7			55.9	271.9	20.1	1.000012
77000.00	10.8	-57.4			52.6	272.2		1.000012
77500.00	9.6	-57.2			51.5	272.5		1.000011
78000.00	8.4	-57.0			50.0	272.8		1.000011

STATION ALTITUDE 3000.00 FEET MSL  
 6 NOV. 61  
 ASCENSION NO. 004

MANDATORY LEVELS  
 3000Z0004  
 WHITE SANDS

GEODETIC COORDINATES  
 52.40043 LAT DEG  
 106.57033 LON DEG

TABLE 7

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM.		WIND DATA	
MILLIBARS	FEET	AIR DEGREES	DEWPOINT CENTIGRADE	PERCENT		DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	5097.	17.5	5.4	34.		149.5	14.8
800.0	6776.	12.0	1.5	47.		164.7	15.3
750.0	8541.	9.8	.7	55.		182.2	22.4
700.0	10412.	5.9	-1.0	61.		195.9	16.5
650.0	12589.	1.1	-5.9	60.		197.9	21.0
600.0	14481.	-4.5	-15.1	62.		216.9	22.7
550.0	16724.	-7.0	-22.0	78.		228.5	22.7
500.0	19148.	-10.4	-27.0	26.		243.9	29.0
450.0	21782.	-16.0	-31.2	25.		259.9	40.0
400.0	24657.	-22.7	-39.6	53.		244.1	47.9
350.0	27821.	-30.7	-47.1	35.		247.9	50.1
300.0	31541.	-39.0	-48.9	10.		251.4	53.9
250.0	35547.	-48.7				257.9	59.8
200.0	40155.	-52.7				256.1	44.2
175.0	42955.	-56.8				265.3	35.7
150.0	46156.	-60.5				265.8	32.4
125.0	49816.	-65.3				277.7	24.9
100.0	54190.	-71.4				260.7	25.5
80.0	58499.	-69.7				299.5	18.4
70.0	61719.	-68.8				315.0	15.9
60.0	64771.	-65.5				278.7	5.0
50.0	67855.	-61.0				339.9	8.1
40.0	72415.	-59.4				259.4	8.0

GEODETIC COORDINATES  
52.48034 LAT DEG  
106.42307 LON DEG

SIGNIFICANT LEVEL DATA  
STATION NO. 510000000  
S M H

TABLE 8

STATION ALTITUDE 5947.50 FEET MSL  
6 NOV. 61 1130 HRS MST  
ASCENSION NO. 50

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
784.8	5947.5	20.1	3.0	37.0
750.0	5125.4	16.1	2.9	41.0
764.3	8048.1	7.5	.0	54.0
749.2	8548.5	7.5	-2.8	40.0
732.3	9207.5	8.5	.1	50.0
700.0	10429.1	6.5	-2	62.0
687.7	10400.0	5.0	-0	70.0
601.8	11953.5	2.8	-4.2	60.0
632.3	13132.8	-1.2	-5.8	71.0
619.2	15080.9	-2.4	-8.1	65.0
594.8	14731.9	-4.7	-14.2	51.0
578.2	15404.0	-4.8	-22.7	25.0
543.3	17053.5	-8.5	-25.9	27.0
514.2	18467.4	-8.0	-26.9	21.0
500.0	19179.7	-9.8	-27.4	22.0
459.4	22412.3	-17.3	-30.5	37.0
400.0	24706.1	-22.5	-28.0	60.0
389.9	25321.1	-25.0	-29.5	54.0
369.6	26593.7	-27.0	-30.6	50.0
333.8	28970.0	-34.9	-44.0	41.0
312.3	30480.1	-39.1	-47.5	55.0
306.8	30687.2	-39.0	-48.0	51.0
300.0	31542.9	-39.4	-50.0	57.0
299.6	31425.0	-39.7	-48.7	
280.7	32876.9	-43.9		
265.3	34176.5	-40.9		
250.0	35412.9	-40.9		
248.9	35509.2	-40.9		
227.6	37453.8	-48.8		
200.0	40228.4	-52.7		
171.5	43470.5	-56.7		
150.0	46241.4	-61.7		

GEODETIC COORDINATES  
32.48034 LAT DEG  
106.42507 LON DEG

UPPER AIR DATA  
JT00000008  
5 M R

STATION ALTITUDE 3997.50 FEET FSL  
6 NOV. 81 1130 HRS MST  
ASCENSION NO. 48

TABLE 9

GEOMETRIC ALTITUDE FSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREE CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SOUND KNOTS	WIND DATA	INDEX OF REFRACTION
						DIRECTION DEGREES (TN)	SPEED KNOTS
3997.5	884.8	20.1	57.0	1047.2	668.4	150.0	0.0
4000.0	884.7	20.1	57.0	1047.1	668.4	150.0	0.0
4500.0	874.1	18.5	56.8	1035.1	668.3	155.2	7.7
5000.0	855.8	16.5	40.6	1025.2	664.2	158.5	9.4
5500.0	838.5	15.0	43.5	1010.4	662.4	161.2	10.8
6000.0	825.4	13.5	40.4	997.5	660.7	165.8	10.8
6500.0	808.6	12.1	49.5	984.4	659.0	167.0	9.9
7000.0	794.0	10.6	52.5	971.7	657.5	170.1	9.4
7500.0	779.7	9.1	55.6	959.5	655.2	175.5	10.5
8000.0	765.6	7.6	58.7	947.0	653.8	171.8	15.1
8500.0	751.7	7.5	49.8	930.6	653.5	172.4	19.8
9000.0	737.9	6.0	53.5	911.5	654.2	175.5	25.0
9500.0	724.4	7.9	57.4	895.2	654.1	180.0	27.2
10000.0	711.2	7.1	59.9	881.7	653.5	186.2	25.5
10500.0	698.2	6.5	63.2	867.6	652.5	192.4	21.1
11000.0	685.5	4.8	69.1	856.1	650.6	197.6	20.2
11500.0	672.6	5.7	64.2	845.8	649.2	199.5	20.6
12000.0	660.1	2.6	60.6	831.9	647.7	200.5	21.4
12500.0	647.8	9	65.2	821.5	645.8	199.1	21.6
13000.0	635.6	-0.7	69.7	810.9	645.8	198.5	21.7
13500.0	623.6	-2.0	67.0	799.5	642.2	200.4	21.8
14000.0	611.8	-5.1	64.8	787.9	640.7	203.6	22.0
14500.0	600.1	-4.2	58.5	776.5	639.5	209.5	22.5
15000.0	588.7	-4.7	58.1	765.4	638.5	215.7	22.6
15500.0	577.4	-4.9	55.1	749.5	638.5	222.7	23.0
16000.0	566.5	-6.0	54.5	737.9	637.0	227.6	23.9
16500.0	555.5	-7.1	55.6	726.6	635.7	231.2	24.9
17000.0	544.6	-8.2	50.8	715.6	634.4	232.2	25.8
17500.0	534.1	-8.4	55.1	702.5	634.1	232.9	26.7
18000.0	523.7	-8.5	55.0	689.5	633.9	234.7	27.4
18500.0	513.5	-8.7	51.0	676.1	633.7	236.7	27.9
19000.0	503.5	-9.5	51.7	665.0	632.7	239.6	27.9
19500.0	493.6	-10.5	52.5	654.5	631.5	247.1	29.2
20000.0	483.9	-11.7	54.5	644.4	630.1	259.5	35.0
20500.0	474.5	-12.9	55.7	634.5	628.7	258.5	36.5
21000.0	464.9	-14.0	57.1	624.7	627.5	257.5	38.9
21500.0	455.7	-15.2	58.5	615.1	625.9	257.9	39.9
22000.0	446.7	-16.5	59.9	605.7	624.4	259.8	39.5
22500.0	437.8	-17.5	52.0	596.4	623.0	241.8	40.4
23000.0	429.0	-18.6	57.6	586.8	621.7	245.8	42.2

UPPER AIR DATA  
 ST00000000  
 S M R  
 GEODETIC COORDINATES  
 32.40034 LAT DEG  
 106.42307 LON DEG

STATION ALTITUDE 3997.30 FEET MSL  
 6 NOV. 81  
 1130 HRS MST  
 ASCENSION NO. 08

TABLE 9 CONT

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	DIRECTION DEGREES (TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
23500.0	420.5	-19.8	-29.0	43.5	577.5	620.5	246.0	44.7	1.000132
24000.0	411.7	-20.9	-28.8	44.0	568.5	618.9	247.4	47.2	1.000150
24500.0	403.4	-22.0	-28.7	54.7	559.5	617.5	247.8	49.8	1.000128
25000.0	395.1	-23.7	-29.0	61.5	551.5	615.5	248.2	51.9	1.000126
25500.0	387.0	-25.4	-30.6	61.5	543.8	615.4	248.5	53.8	1.000124
26000.0	378.9	-26.4	-33.9	60.9	534.8	614.1	248.6	54.2	1.000121
26500.0	371.1	-27.4	-37.7	56.4	525.9	610.8	248.6	54.1	1.000119
27000.0	363.2	-28.8	-39.6	54.5	517.8	609.0	248.7	55.5	1.000117
27500.0	355.5	-30.4	-40.9	54.8	510.1	607.1	248.7	52.8	1.000115
28000.0	348.0	-31.9	-42.1	55.2	502.4	605.1	249.0	52.8	1.000113
28500.0	340.6	-33.5	-43.4	55.6	494.9	603.2	249.4	53.2	1.000111
29000.0	333.4	-35.0	-44.7	56.1	487.5	601.5	250.2	55.5	1.000109
29500.0	326.1	-36.4	-45.5	57.7	479.7	599.5	251.5	53.6	1.000108
30000.0	319.0	-37.8	-46.4	59.4	472.1	597.7	251.5	55.9	1.000106
30500.0	312.1	-39.1	-47.5	40.8	464.5	596.0	251.5	54.5	1.000104
31000.0	305.5	-39.1	-48.9	34.1	456.5	596.0	250.5	55.1	1.000102
31500.0	298.6	-39.9	-49.4	55.0**	445.9	595.0	248.9	56.0	1.000100
32000.0	292.0	-41.4	-54.5	22.5**	438.8	595.1	248.0	56.9	1.000098
32500.0	285.5	-42.8	-62.5	9.0**	431.8	591.5	247.4	57.7	1.000096
33000.0	279.1	-44.2			424.7	589.5	246.9	58.4	1.000095
33500.0	272.9	-45.4			417.4	587.9	246.5	58.8	1.000093
34000.0	266.7	-46.8			410.2	586.4	246.1	59.7	1.000091
34500.0	260.7	-48.9			401.4	586.0	246.2	60.9	1.000089
35000.0	254.8	-46.9			392.5	586.0	246.8	62.5	1.000087
35500.0	249.0	-46.9			383.4	586.0	248.5	64.0	1.000085
36000.0	243.5	-47.4			375.5	585.4	249.8	65.4	1.000084
36500.0	237.8	-47.9			367.7	584.7	252.5	65.7	1.000082
37000.0	232.4	-48.4			360.2	584.1	254.9	62.1	1.000080
37500.0	227.1	-48.9			352.8	583.4	256.1	58.9	1.000079
38000.0	221.9	-49.6			345.7	582.5	257.0	55.5	1.000077
38500.0	216.8	-50.5			338.8	581.6	256.0	55.2	1.000075
39000.0	211.8	-51.0			332.1	580.7	254.5	51.8	1.000074
39500.0	206.9	-51.7			325.4	579.8	255.6	50.6	1.000072
40000.0	202.1	-52.4			319.0	578.9	255.5	49.4	1.000071
40500.0	197.4	-53.0			312.5	578.0	254.1	46.9	1.000070
41000.0	192.8	-53.7			306.0	577.2	255.6	43.8	1.000068
41500.0	188.5	-54.5			299.7	576.4	257.8	41.0	1.000067
42000.0	183.9	-54.9			293.5	575.6	261.6	38.5	1.000065
42500.0	179.6	-55.5			287.4	574.7	265.5	36.0	1.000064
43000.0	175.4	-56.1			281.5	573.9	265.5	34.1	1.000063

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 5997.50 FEET MSL  
 6 NOV. 81  
 ASCENSION NO. 28

UPPER AIR DATA  
 3100000000  
 5 M H

TABLE 9 CONT

GEODETIC COORDINATES  
 32.48034 LAT DEG  
 106.42307 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
		AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE				DIRECTION DEGREES (TRUE)	SPEED KNOTS	
43500.0	171.5	-50.7			275.7	575.1	208.0	52.5	1.000061
44000.0	167.2	-57.5			270.1	572.0	208.9	50.5	1.000060
44500.0	163.2	-58.5			264.0	571.0	209.7	48.7	1.000059
45000.0	159.5	-59.1			259.5	569.9			1.000058
45500.0	155.5	-59.9			254.0	568.9			1.000057
46000.0	151.8	-60.7			248.9	567.8			1.000055

STATION ALTITUDE 3947.00 FEET MSL  
 6 NOV. 81  
 ASCENSION NO. 88

MANDATORY LEVELS  
 3100000088  
 S M H

GEODETIC COORDINATES  
 32.48034 LAT DEG  
 106.42307 LON DEG

TABLE 10

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE		WIND DATA	WIND DATA
		AIR DEGREES	DEWPOINT CENTIGRADE	DIRECTION DEGREES(TM)	SPEED KNOTS
850.0	5122.	16.1	2.4	154.1	9.8
800.0	6198.	17.2	1.5	164.1	9.4
750.0	8552.	7.5	-2.6	172.8	20.4
700.0	10419.	6.5	-2	191.7	21.5
650.0	12398.	1.2	-4.7	194.5	21.5
600.0	14489.	-4.2	-16.2	209.5	22.5
550.0	16728.	-7.6	-23.6	231.9	25.4
500.0	19153.	-9.8	-27.4	240.6	28.0
450.0	21789.	-15.4	-29.7	254.0	39.5
400.0	24602.	-22.5	-28.6	248.0	50.8
350.0	27825.	-31.5	-41.8	244.9	52.6
300.0	31350.	-39.4	-50.0	249.2	55.8
250.0	35350.	-46.9		248.0	65.6
200.0	40137.	-52.7		253.5	48.7
175.0	42938.	-56.2		265.6	34.0
150.0	46116.	-61.1			